

Cost of Clearing Land

As urbanizing pressures become greater and greater on farmland, some people are considering or are actually in the process of bringing marginal land back into production. At one time New England had far more acreage under production than we do now. Some of the land no longer in farmland was developed for industrial and residential purposes and other land was abandoned because it was unprofitable to cultivate. This land was allowed to grow up to brush and shrubs which were, in turn, replaced by trees. This is why, when hiking through what is now forest in New England, one often comes upon stone walls. These stone walls were built when this land was farmed.

Now farmers are again clearing woodlands, which are less expensive to purchase than open lands, and reclaiming them for agricultural use. Often this is a part of a timber harvest or cordwood harvest sequence. Clearing land can have many benefits; it also can be quite costly. Anyone clearing land has many factors to consider.

The topography of the land should be the first consideration. If it is rocky or ledge, very rolling, swampy or very poorly drained, will it be worth putting into production in the first place? To help you decide whether the land is good for agricultural purposes, you can consult soil survey maps of the area. These maps will tell you the soil type, drainage, slope, general topography, and what kind of crops it is best suited for.

Your town's Inland Wetlands Commission is legally entitled to review any proposed activity which may affect a wetland or watercourse, including farming and forestry activities. A determination whether such activity qualifies as an exempt agricultural use must be made. Clear cutting of trees for the expansion of crop land and construction of roads, provided they are directly related to the farming or forestry operation are permitted "as of right" and do not need a permit. In addition to checking with the town's wetland commission, farms should also check with their USDA Service Center before clearing near wetlands. Land clearing activities could put them in violations of the conservation provisions of the farm bill, thus jeopardizing their eligibility to USDA programs.

Once the decision has been made to clear the land, the first thing you have to deal with is the trees and brush. The trees will have to be cut for timber or firewood and the brush then piled and put through a grinder at least \$200/ hour. The chips have a potential retail value. Land that is heavily wooded and hasn't been touched for a generation or so may have up to ten thousand board feet of lumber per acre on it. You can sell this standing timber to loggers for a price of \$32 - \$290 per thousand board feet, depending on the species and quality. Higher prices are offered for hardwoods and lower prices for softwoods. You might also have a lot of cordwood that you could cut, depending on how much timber you cut first. You should be able to cut from five to ten cords per acre. This cordwood may have little value, or you could cut it yourself to realize additional returns. (Another means to get rid of the trees is to simply push

the trees over and pile them with a bulldozer. This would increase clearing costs and probably shouldn't be done, considering the value of the wood.) The next job to take is removing the stumps. This is best done with a bulldozer. You can dig them out or possibly pull them out with a backhoe or tractor, but this would be quite time consuming. Removing the stumps is usually the most costly job in clearing land. You will need a fair sized bulldozer with a root rake. Machines needed to clear land can easily cost \$5000 per acre, including removal of stumps off-site and final grading. The work one of these machines can do in an hour is quite impressive. We have seen these large bulldozers working on roads and other places, but until you are actually involved in the work one of these monsters is doing, you can't appreciate what they can accomplish in an hour. One of these large machines can have a 12-inch diameter stump out in a matter of seconds! Think how long you would have to dig, cut and pull to get a stump like that out with a farm tractor.

Once you get the stumps out of the ground, you have to put them somewhere. You will want to put them out of the way where you won't have to move them again. These stumps take quite a long time to rot and will usually take up about one-tenth of the area you are clearing. The distance the stumps and other trash has to be moved can be quite time consuming and costly. Planning where these stumps will be put is important. Along with stumps, as many roots as possible should be removed in order to avoid problems when preparing soil later. There may also be rocks, boulders and stone walls to remove. You will probably want to bury these to avoid taking up any more precious area. There may be a market for rocks. The land should also be leveled while the land clearing is being done. The cost of grading can range from \$65 - \$100 per hour depending on the machine. Depending on the soil type and the topography of the land, you may need to put in drainage. This can add substantially to the cost of the land development but can pay for itself. Soils reclaimed from the forest will typically be quite acid because of the high organic matter content. You should check the pH of the soil with a soil test to be sure how much lime you need. Once the clearing is done, it is typical to put on about four tons of lime per acre. When applying the lime, it is best to put on two applications so that it can be better worked into the plow layer.

Another method of clearing is the use of a machine that will grind everything in its path into the ground. This includes whole trees, large stumps and even some types of rocks. The machine is basically a giant roto-tiller. Once you have cut all the timber and firewood you want from a piece of land, you can turn whatever is left into the ground, provided the machine can knock it down. The cost for this machine is considerably more than a bulldozer (about \$3000 per acre) but the job is basically done when the machine is finished. The machine leaves a very fluffed up soil with a lot of wood and other organic matter mixed into it. The addition of nitrogen will help the organisms decompose the organic matter, by providing the proper carbon to nitrogen ratio. For further information on this machine look for ads in current farm newspapers and magazines (called a forestry mower or "Brontasaurus").

Once the land is cleared and limed, there is an urge to get on it and start planting. This should

be postponed for several months because it takes time for the lime to work properly, and more time for the roots and chips to decompose. The land should be left idle for a minimum of a year, and two for best results. A cover crop should be put on the land to conserve soil, water, and nutrients while the final decomposition of the tree roots and lime reaction takes place.

Simply cutting the trees and brush and leaving the stumps to rot is another simple method if one is not in a hurry. There is some maintenance required for this. One needs to keep shoots and other new growth cut back. With some help on your part, grass could be established among the stumps and used as a pasture until the stumps finally rot away (which could take many years). If too many stumps prevent seed to be incorporated, the lot may become a muddy disaster! A stump cut low to the ground could be treated as one would treat a large rock; work around it. If you don't have large areas to be concerned with, pigs will do a good job on stumps' they love to dig things out. Years ago, people would make holes in the ground around an old stump with a crowbar and put a handful of kernel corn down each hole. The pigs would dig and dig after the corn. Once the pigs were done hunting for corn, the stump could easily be hauled away. (Note: pigs can be penned in with a single strand of electric fence 10 to 12 inches above the ground.)

If you have an overgrown pasture, like so many farmers do, grazing sheep and goats in it will be very helpful in bringing it back. These industrious animals will eat almost anything. Shoots, brush, weeds and treebark will all be eaten by these hungry hoofers. (Contrary to popular belief, goats will not eat tin cans so you will have to pick up any trash yourself.) In a year or two all you will have left are some larger dead trees that you will have to cut down. Most cows can eat young shoots, but won't touch them if they get too big. You will need to put cows out to graze the shoots after they have grown some, but before they are too woody. There are some weeds and woody plants that are poisonous to some animals, so be sure to check with your Extension livestock specialist or veterinarian about these.

If you have a lot of brush to cut and you don't want to take the time to fence an area for animals (or don't have or want animals), you may want to hire a person with a heavy duty rotary mower to come in and cut it. These machines do a great job providing you don't have too many large rocks to contend with. A machine of this type with a tractor and operator would likely cost at least \$200 per hour.

Over the years, frost action may bring large rocks to the surface. If the field has large rocks on the surface or severe ruts (from former corn production), mowing or reseeding will not be an option.

Robert W. Martin, Massachusetts Extension
Adapted by Joyce Meader (7/00)